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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JIANG, YONG HANG

ART UNIT

PAPER NUMBER

2612

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,823	<b>Applicant(s)</b> UDAGAWA ET AL.	
	<b>Examiner</b> YONG HANG JIANG	<b>Art Unit</b> 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 11-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claim 17 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. It has been held that a computer program is not a process, machine, manufacture, or composition of matter.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1-6 and 11-17 rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto et al. (US 6,081,619).

Regarding claims 1 and 16, Hashimoto discloses an information recognition device and method (via movement pattern recognizing apparatus, Abstract), comprising:

thermal radiation detection means for detecting, by a thermal radiation sensor, thermal radiation emitted from an object-to-be-detected having plural different pieces of attribute information existing in a detection range (via sensor head 21 comprising

Art Unit: 2612

pyroelectric devices 11 detecting different thermal patterns , Col. 9, lines 15-17 and 40-65, Col. 28, lines 8-20; Fig. 4 and Fig. 31(a)-(c));

behavior pattern model storage means for storing a behavior pattern model obtained by modeling output of the thermal radiation sensor depending on a behavior pattern of an object-to-be-detected by using a predetermined modeling method (via movement pattern storage means for storing data about previously formed various movement patterns, Col. 2, lines 44-47; and Col. 13, lines 17-18); and

information recognition means for recognizing plural different pieces of attribute information relating to the object-to-be-detected existing in the detection range based on a detection result of the thermal radiation detection means and the behavior pattern model stored in the behavior pattern model storage means (CPU of signal processing circuit 113 activates program corresponds to pattern recognizing means, Col. 13, lines 13-17), wherein

the information recognition means extracts the feature data from the detection result of the thermal radiation detection means (via output from sensor head 21 supplied to signal processing circuit 22, Col. 9, line 42-65), calculates the likelihood between the feature data and the behavior pattern model based on the feature data and the behavior pattern model stored in the behavior pattern model storage means, and recognizes plural different pieces of attribute information relating to the object-to-be-detected based on the calculated likelihood (via movement pattern detected subject to a comparison with various movement patterns stored in memory, Col. 13, line 66 to Col. 14, line 3).

Art Unit: 2612

Regarding claim 2, Hashimoto discloses wherein the behavior pattern model storage means stores plural behavior pattern models depending on respective types of behavior patterns (via movement pattern storage means for storing different passage patterns, Col. 2, lines 44-47; and Col. 13, lines 17-18 and Col. 28, lines 8-20 and Fig. 31(a)-(c)).

Regarding claim 3, Hashimoto discloses the device further comprising: behavior pattern model generation means for generating the behavior pattern model of the object-to-be-detected based on the output of the thermal radiation sensor by using the predetermined modeling method (generation means to produce behavior pattern model stored in movement pattern storage means, Col. 2, lines 37-51 and Col. 10, lines 3-8).

Regarding claim 4, Hashimoto discloses wherein the thermal radiation sensor is a thermo-sensor. (See Col. 9, lines 1-3)

Regarding claim 5, Hashimoto discloses a quantum thermal radiation sensor (Col. 8, lines 57-61)

Regarding claim 6, Hashimoto discloses the thermo-sensor is a pyroelectric infrared sensor for detecting infrared emitted from the object-to-be-detected using a pyroelectric effect (Col. 9, lines 1-6).

Regarding claim 11, Hashimoto discloses wherein the feature data comprises first feature data constituted by a spectrum in a frame unit of a detection result of the thermal radiation detection means (via signals obtained from the plural detection portions of the infrared array sensor) and second feature data constituted by an average amplitude value of the spectrum in the frame unit (via movement signal normalizing

Art Unit: 2612

means uses the reference data to obtain the ratio of the difference between signals to generate normalized data, Col. 4, lines 45-57).

Regarding claim 12, Hashimoto discloses the first feature data is obtained by transforming a value of the spectrum in the frame unit into a value of a common logarithm (via data transformed into binary coded data, Col. 19, lines 7-22).

Regarding claim 13, Hashimoto discloses wherein the feature data further comprises third feature data constituted by a difference between feature indicated by the first feature data of a selected frame and feature indicated by the first feature data of the frame immediately before the selected frame (via ratio of the difference between signals, Col. 4, lines 45-57).

Regarding claim 14, Hashimoto discloses wherein the feature data further comprises fourth feature data constituted by a difference between feature indicated by the second feature data of a selected frame and feature indicated by the second feature data of the frame immediately before the selected frame (via ratio of the difference between signals, Col. 4, lines 45-57).

Regarding claim 15, Hashimoto discloses wherein when the behavior pattern model is constituted by the feature data of a high dimension of four or more, the device comprises: feature data display means for displaying the feature data corresponding to each behavior pattern model stored in the behavior pattern model storage means as a coordinate point in a two dimensional space (via result of recognition on display unit 23, Col. 10, lines 29-32); and detection result display means for displaying a coordinate point corresponding to a detection result of the thermal radiation detection means in a

Art Unit: 2612

space in which the coordinate point of the feature data is displayed (via detection result displayed on display unit 115, Col. 12, lines 55-67).

Regarding claim 17, claim 17 is computer program of claim 1 above; therefore, it is rejected for the same reasons as claim 1 above.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. as applied to claim 1-3 above, and further in view of Lee et al. (US 2003/0058111).

Regarding claim 7, Hashimoto fails to disclose the predetermined modeling method is an HMM (Hidden Markov model).

Lee teaches using an Hidden Markov model to predict events with a complex time varying behavior. The HM model provides a powerful probabilistic framework for learning and recognizing signals that exhibit complex time varying behavior.

(Paragraph 71)

From the teachings of Lee, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device to include the predetermined modeling method is an HMM as taught by Lee to use a powerful probabilistic framework to more accurately learn and recognize signals

4. Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. as applied to claim 1-3 above, and further in view of Tomooka et al. (US 5,703,368).

Regarding claim 18, Hashimoto fails to disclose an alarm system comprising the information recognition device according to claim 1, 2, or 3, determination means for determining whether or not the object-to-be-detected is a person based on a recognition result of the information recognition device; and alarm means for raising an alarm when the determination means determines that the object-to-be-detected is a person.

Tomooka teaches an alarm system comprising determination means for determining whether or not the object-to-be-detected is a person based on a recognition result of the information recognition device (via human detecting circuit, Abstract); and alarm means for raising an alarm when the determination means determines that the object-to-be-detected is a person (burglar alarm, Col. 1, lines 10-20).



From the teachings of Tomooka, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Hashimoto to include an alarm system comprising the information recognition device according to claim 1, 2, or 3; determination means for determining whether or not the object-to-be-detected is a person based on a recognition result of the information recognition device; and alarm means for raising an alarm when the determination means determines that the object-to-be-detected is a person as taught by Tomooka to use the information recognition device to monitor a secure area, thereby improving security.

5. Claim 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. as applied to claim 15 above, and further in view of Tomooka et al. (US 5,703,368).

Regarding claim 18, Hashimoto fails to disclose an alarm system comprising the information recognition device according to claim 15, determination means for determining whether or not the object-to-be-detected is a person based on a recognition result of the information recognition device; and alarm means for raising an alarm when the determination means determines that the object-to-be-detected is a person.

Tomooka teaches an alarm system comprising determination means for determining whether or not the object-to-be-detected is a person based on a recognition result of the information recognition device (via human detecting circuit, Abstract); and alarm means for raising an alarm when the determination means determines that the object-to-be-detected is a person (burglar alarm, Col. 1, lines 10-20).

From the teachings of Tomooka, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Hashimoto to include an alarm system comprising the information recognition device according to claim 15; determination means for determining whether or not the object-to-be-detected is a person based on a recognition result of the information recognition device; and alarm means for raising an alarm when the determination means determines that the object-to-be-detected is a person as taught by Tomooka to use the information recognition device to monitor a secure area, thereby improving security.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YONG HANG JIANG whose telephone number is (571)270-3024. The examiner can normally be reached on M-F 9:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian A. Zimmerman can be reached on 571-272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. J./  
Examiner, Art Unit 2612

/Brian A Zimmerman/  
Supervisory Patent Examiner, Art Unit 2612